

REMARKS/ARGUMENTS

Favorable consideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 13-22 are presently pending in this application, Claims 1-12 having been canceled and Claims 13-22 having been added by the present amendment.

In the outstanding Office Action, the abstract of the disclosure was objected to because of informalities; Claims 4 and 8 were objected to under 37 CFR 1.75(c) as being in improper form; and Claims 1-3, 5-7 and 9-12 were rejected under 35 U.S.C. 103(a) as being unpatentable over Shiego [sic] et al.(JP11224127, hereinafter referred to as “Morimoto et al.”).

In response to the objection to the abstract, the abstract has been rewritten to correct the noted informalities. Accordingly, no further objection on that basis is anticipated.

In response to the objection to Claims 4 and 8, these claims have been canceled. Therefore, the objection is now moot.

New Claims 13-22 are fully supported by the specification, drawings and claims as originally filed. For example, Claim 13 is supported by the specification, page 9, lines 28-31, page 10, lines 20-22, page 11, lines 9-10, page 12, line 34 to page 13, line 1; Claim 14 is supported by the specification, page 12, lines 22-23; Claim 15 is supported by the specification, page 13, lines 19-21; Claim 16 is supported by the specification, page 13, line 35; Claim 17 is supported by the specification, page 15, lines 31-33; Claim 18 is supported by the specification, page 12, lines 12-14; Claim 19 is supported by the specification, page 14, lines 10-12; Claim 20 is supported by the specification, page 13, lines 11-12; Claim 21 is supported by the specification, page 14, line 25; and Claim 22 is supported by the specification, page 14, lines 19-20. Applicants therefore submit that no new matter has been introduced.

Briefly recapitulating, Claim 13 is directed to a hot plate unit. For example, referring to the non-limiting embodiment of Fig. 2, the hot plate unit 10 includes a supporting case 22, a

ceramic substrate 11, a resistance heating element 12, and a coolant introducing pipe 27. The supporting case 22 has a thickness of 50 mm or less. The ceramic substrate 11 is fitted to the supporting case 22. The resistance heating element 12 is provided on the surface of the ceramic substrate 11 or inside the ceramic substrate 11. The coolant introducing pipe 27 is disposed at the bottom of the supporting case 22.

Since the hot plate unit includes a *ceramic* substrate for heating, for example, a wafer, the heating surface of the ceramic substrate does not deform under heating or cooling. In order to cool the ceramic substrate which has a thermal conductivity lower than that of metal, the hot plate unit further includes a coolant introducing pipe at the bottom of the supporting case. In addition, since the thickness of the supporting case is 50 mm or less, the coolant can be discharged from the supporting case rapidly. Thus, cooling speed is improved while the deformation of the heating surface is suppressed.

The Office Action asserts that Morimoto et al. teach a hot plate including a supporting case 4, a substrate 1 with a heater 2, and an inflow hole 5a. However, Morimoto et al. fail to disclose a ceramic substrate fitted to a supporting case and a supporting case having a thickness of 50 mm or less. Although Morimoto et al. disclose a heater 2, Morimoto et al. do not teach that the heater 2 is made of ceramic.<sup>1</sup> Further, Morimoto et al. fail to disclose that the ceramic substrate is fitted to a supporting case. Instead, in the Morimoto et al. heater unit, the heater 2 is provided on the cooling chamber 4.

In the Morimoto et al. reference, because the heater 2 deforms in accordance with the deformation of the upper surface of the cooling chamber 4 under heating and cooling, the purpose of the Morimoto et al. reference is to prevent such deformation by controlling a supply of the coolant to the cooling chamber 4. Namely, the Morimoto et al. heater unit requires complicated coolant supply control. On the other hand, in the present invention recited in

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<sup>1</sup>Morimoto et al. state that “the heater 2 includes a resistance heating wire...” (page 3, right col., lines 8-9).

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Claim 13, the upper surface of the ceramic substrate does not substantially deform because the substrate is made from ceramic. Therefore, complicated coolant supply control is not required to suppress the deformation of the heating surface.

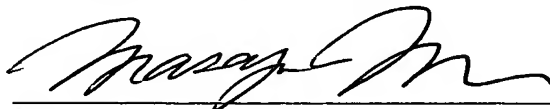
Accordingly, Morimoto et al. are not believed in any way to obviate the specific features recited in Claim 13. Therefore, Claim 13 is believed to be allowable.

Substantially the same arguments as set forth above with regard to Claim 13 also apply to dependent Claims 14-22, which depend directly from Claim 13. Accordingly, each of the dependent claims is also believed to be allowable.

Consequently, in view of the present amendment, it is respectfully submitted that this application is in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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